

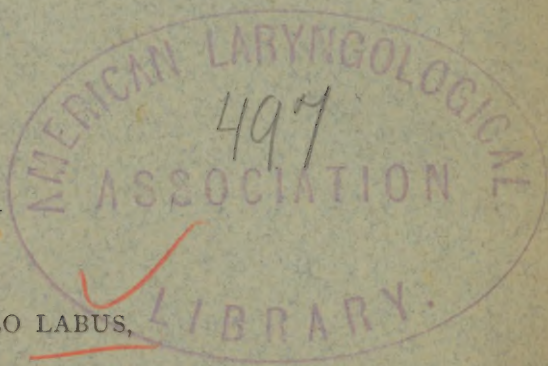
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REMOVAL OF A TRACHEAL NEOPLASM BY
OPERATION THROUGH THE NATURAL
PASSAGES.

BY

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[Reprinted from ARCHIVES OF LARYNGOLOGY, Vol. II, No. 3, 1880]

REMOVAL OF A TRACHEAL NEOPLASM BY OPERATION THROUGH THE NATURAL PASSAGES.

BUT two cases of tracheal tumors are on record, the removal of which was attempted by operations through the natural passages.* The first is the well known case of Schrötter,† in which that operator, after unsuccessful attempts at removal with laryngeal forceps, successfully injected a solution of sesquichloride of iron into the parenchyma of the growth, with the purpose of inducing mortification of its substance. A recurrence rendered further interference necessary toward the end of the third year (1870); and several ineffectual attempts at its destruction were made with the galvano-caustic snare, galvano-caustic point, and by cauterization with a paste of chloride and oxide of zinc, these operations being performed under local anæsthesia from alternate pencillings with chloroform and strong solution of morphia. Schrötter subsequently succeeded in wrenching portions of the tumor off with hooked forceps; and finally resorted again to the parenchymatous injection

* This article had been committed to the printers' hands before the appearance of Dr. Morell Mackenzie's *Manual of Diseases of the Throat and Nose*, on the 524th page of which two cases are cited of tracheal tumors destroyed by him with the galvano-cautery, applied through the natural passages.

† Wiener med. Jahrb., 1868, Bd. 15; und Jahresbericht der Klinik für Laryngoscopie. Wien, 1880. pp. 80-85.

Reprinted from ARCHIVES OF LARYNGOLOGY, Vol. I, No. 3, September, 1880.

of liquid sesquichloride of iron by means of a sharp-pointed, curved syringe passed through the mouth and larynx. These succeeded partially, only, in inducing efficient mortification of portions of the neoplasm; and it was finally decided to await further developments. Two years and a half later, Schrötter found the tumor to have reacquired the size of a filbert,* but the patient's respiration was so little impeded that he declined to submit to further local interference.

Størck† examined this same patient in the winter of 1878-9, and found the tumor so large as nearly to fill the caliber of the windpipe. Tracheotomy was proposed as a means of access to the tumor, but was refused.

The second case is also related by Schrötter,‡ who diagnosed a tumor in the upper part of the trachea of a girl nineteen years of age, of much the same appearance as in the other case, and supposed, like the former, to be a sarcoma. This patient died under an attempt by another physician to repeat Schrötter's method of injection. Microscopic examination of the growth corroborated Schrötter's diagnosis of sarcoma.

In these two cases the laudable spirit of initiative procedures exhibited by the operators was not crowned with the results hoped for.

I am happy to add a case of my own to this record, in which operative procedure through the mouth has succeeded as completely as could be desired.

On the 17th of last January, my distinguished colleague, Dr. Viganoni of Monza, brought to me in consultation a miserable pale-faced boy, suffering with labored respiration, audible at a distance; his state, in fact, being such as to inspire compassion in all who saw him.

I thought it preferable to examine the upper aerial passage at once, and defer the anamnestical research and that of all the phenomena discoverable through other diagnosti-

* *Jahresbericht der Klinik für Laryngoscopie.* Wien, 1875. p. 102.

† *Klinik der Krankheiten der Kehlkopf.* Stuttgart, 1880. p. 439.

‡ *Op. citat.*

cal means until afterward. I soon discovered the cause of the dyspnœa, and showed it to my colleague present. Through the glottis, down in the windpipe was seen a granulated mass that clogged nearly all its calibre. With this discovery the therapeutic indication was evident—destruction of this neoplasm.

As the boy had not come to Milan expecting to remain for the necessary treatment, I consented to his return home, in order to make arrangements for a stay of some length in this city.

On the 20th of January this poor boy appeared at the dispensary for diseases of the throat at the Grand Hospital.

Here are all the clinical data that I have been able to collect :

His name is Emilio Fossati, born at San Lorenzo near Monza, of healthy parents ; he is free of hereditary or contracted disease ; and, until the present time, never suffered from a serious illness. He related that at ten years of age he commenced to work in a manufactory of wool and cotton stuffs, where he was employed to fill shuttles. Although in a dusty atmosphere, his health continued good during the first two years ; but later, he became annoyed by a dry, persistent cough, excited by a tickling in the wind-pipe. All the usual simple remedies administered to him by his parents being without success, he applied in the spring of last year to be admitted into the hospital at Monza, whence, after a few weeks' sojourn, he withdrew, cured.

Returning to his work, the cough soon recurred, not only with the same symptoms as before, but with the superaddition of a difficulty of respiration, which was more perceptible when he made any physical exertion, and which no longer permitted him to run when at play with his companions.

The difficulty of respiration gradually increasing, Fossati requested to be readmitted into the hospital of Monza, where he was received on the 14th of last December.

During his stay there, plasters and absorbent ointments were applied to his neck ; but not improving at all, and, indeed, growing worse, he left the hospital on the 5th of January and returned home.

The dyspnœa, however, increasing and becoming alarming, in about ten days his parents took him to consult Dr. Viganoni, who, recognizing the gravity of the case, brought Fossati to me, to see

if I could discover with the laryngoscope the cause of the stenosis that evidently appeared to be located in the upper aerial passages.

Here is the result of the examination of his state at that time :

He is 13 years of age ; impubescent ; his frame is tolerably well developed, but rather emaciated. The pale face and the pale mucous membranes, the dark-rimmed and hollow eyes, and a general shrinking from the cold, which he feels to an extraordinary degree, complete the portrait of a person a prey to great suffering.

When quiet, his respiration, although loud, is tolerably calm ; but exercise, or any fatigue, however slight, soon provokes a violent dyspnœa, when, without any descent of the larynx in inspiration, the upper clavicular spaces are seen to become more deeply depressed, and the jugular fossa to recede further, and the hissing sound in respiration is heard more distinctly. The position in which he breathes most freely is when seated with the head bent slightly forward, because this, by narrowing the intercartilaginous spaces of the windpipe, favors the enlargement of its caliber. In a reclining position he feels as if suffocating ; and at night, when in bed, in ill ventilated rooms and in an atmosphere vitiated by an accumulation of occupants, the dyspnœa becomes so violent as to produce real paroxysms of suffocation.

To the dyspnœa is added a dry, persistent cough, that continually annoys him, sometimes with violent paroxysms that leave the sternal regions in a painful condition. The voice is sonorous and pure in quality, but without intensity, owing to the want of aerial pressure. There is no characteristic expectoration.

Physical examination of the chest does not show any irregularity upon percussion ; and the auscultatory phenomena cannot be appreciated at their just value because of being overpowered by the tracheal hiss. The sound of percussion on the larynx and on the windpipe does not differ from that at the point where the tumor is located ; and upon auscultation of the trachea, nothing is heard but a hissing sound. Upon palpation, these organs do not show any painful sensitiveness.

In the apparatus of circulation nothing abnormal is observed, except a weak and accelerated pulse.

As for the digestive organs, as well in the upper passages as in the gastro-intestinal part, no disease is discovered ; there is only experienced a want of appetite ; the act of swallowing, even, is neither difficult nor painful.

Besides this, Fossati has not, and never has had, fever.

His remarkable emaciation proceeds evidently from lack of bodily exercise, and from the scant supply of food that he takes with the view of not overfilling the stomach and causing, consequently, an increase of dyspnœa ; from the insufficient oxygenation of the blood; and from the impossibility, latterly, of satisfying the desire of sleep, so necessary at his age.

Upon reëxamination with the laryngoscope, I found the epiglottis of small size, folded at the edges, and somewhat depressed over the upper laryngeal orifice, as is usual in impubescents ; the remainder of the larynx is also small in proportion to his age.

All the different parts are found in an entirely normal condition, and even the movements are performed accurately.

When the vocal cords open in the act of respiration, there is seen below them a granulated tumor, of a reddish hue, that occupies in a great measure the lumen of the air passage, leaving free the anterior segment only.

The tumor does not move even under strong inspiration or expiration. It is impossible to establish whether it is placed on the posterior wall or on the lateral walls, the tumor itself covering the exact point of its base. From the fact that only the anterior segment of the cricoid cartilage is visible, it may be affirmed, however, that it must be located on a level with the first trachea. rings.

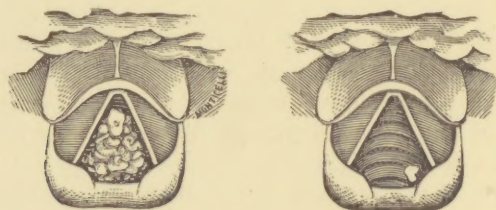
My colleagues, Dr. Frua, my assistant, Dr. Margary and Dr. Baiardi, of Turin, and Dr. Salomoni of Cremona, who were present at the visit at the dispensary, having each one in turn examined Fossati with the laryngoscope, and declared the presence of the above-described tumor, I decided at once to attempt its removal.

Without having made preparatory soundings to enable the larynx to bear the instruments, I took Türck's forceps in which I had made a long curve, so that the vertical portion was eight centimeters in length, and had given to the branches an antero-posterior direction, and placed it in the upper laryngeal orifice ; and then, guided by the laryngoscope, in a moment of profound inspiration, I lowered it into the larynx, passed it between the open vocal cords, and, at this moment, opening the branches of the forceps, seized and held the tumor. When I withdrew the instrument the tumor was caught in its branches.

The operation was performed with such rapidity that those who were watching the procedure, did not perceive that it had been already accomplished.

The slight dripping of blood caused by the wound, and the consequent cough to throw it off having ceased, Fossati immediately realized that his respiration had become perfectly free.

Reëxamined by my colleagues and myself, we discovered that there still existed a piece of the tumor about the size of a hemp seed, between the left lateral and posterior wall of the wind-pipe, on a level with the third ring. In the two illustrations here presented, the laryngoscopic images before and after the operation are depicted in the natural size.



Whether on account of the cough or the repeated examinations, Fossati could no longer endure even the simple application of the laryngoscopic mirror, so that the attempt to remove the small part of the tumor still remaining was postponed until the following day.

On January 21st the patient returned, and, with a beaming countenance, said he had slept comfortably all night, which he had not done for a long time. No blood had been expectorated except a few clots toward evening, and locally he only experienced a more marked sensibility. The respiration was entirely free. Having examined him together with my colleagues who assisted at the visit at the dispensary, we saw distinctly the remainder of the tumor as shown above in the figure.

In the same manner as on the preceding day I succeeded in removing this also, and only a slight elevation remained in its place.

The dispensary being closed the next day, Fossati returned on the 23d. With the same forceps I nipped this elevation, bringing away fragments of tissue.

For two days consecutively I repeated this same nipping, more with the idea of mortifying the base of the tumor than for anything else.

On January 26th a laryngoscopic examination being made by

sunlight, nothing was discovered except a slight inequality at the point where the tumor had had its seat.

On the 30th even this had disappeared. The patient's general health had already improved; he had gained color; his eye had brightened; the appetite was healthy, and he was able to satisfy it to satiety. Upon auscultation of the chest there was noticeable only a short, quick respiration at the upper lobe of the lungs, owing certainly to a slight catarrh by hyperæmia ex-vacuo and by the insufficient ventilation of the lungs.

On February 1st, ten days after entering the dispensary, he was dismissed.

Later news informed me that Fossati continued in good health, but I was enabled to confirm the assertion on my own evidence on May 23d, P. M., on which date I examined him with the laryngoscope, and did not discover even the slightest sign of a return of the tumor.

Here is, finally, the result of the microscopic examination of the tumor, made by Dr. Baiardi, and kindly communicated to me. He does not leave unnoticed how much the anatomico-pathological structure of this tumor resembles that of the two cited by Schrötter:

"The tumor is the size of a pea, perhaps larger, round and irregular in form, has a granulated surface of a reddish-white color, and is of rather a hard consistency.

"The surface of the cut, seen fresh, is dry, of a whitish hue, and uniformly smooth.

"In sections made after having been subjected to the usual methods of hardening, the tumor shows at the periphery a squamous stratified epithelium of different thicknesses: the epithelium is soft and delicate, but in certain more superficial epithelial cells, a slight infiltration of horny substance is observed in the cellular protoplasm.

"Immediately under the epithelium exists a strong infiltration of young cells in a narrow stroma of small-fibred connective tissue, numerous capillary blood-vessels, and here and there small blood extravasations of recent date.

"All the remainder of the tumor is formed of connective oval and fusiform cells, now disposed irregularly, now in parallel masses, and contained in a fundamental substance, here homogenous, there fibrous, but everywhere scanty.

"In some sections, especially near the base of the tumor, is found quite a quantity of fibrous connective tissue.

"The vessels that traverse the mass of the tumor are very much enlarged, with very thin walls, and are few in number.

"The diagnosis, therefore, can be given as fibro-sarcoma."

ARCHIVES OF LARYNGOLOGY

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NEW YORK,

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London. N. TRUEBNER & CO., 59 Ludgate Hill.

Paris. J. B. BAILLIERE, 19 Harteleville.